AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (withdrawn) A rotor rotational position-adjusting system for a vertical takeoff and landing aircraft comprising:

a plurality of detectors generating rotor signals indicative of positions of each of a plurality rotors of the aircraft, said plurality of rotors lifting the aircraft; and

a controller coupled to said plurality of detectors, said controller adjusting a rotational speed of at least one of said plurality of rotors in response to said rotor signals.

2. (withdrawn) A system as in claim 1 wherein said plurality of detectors comprises:

a first detector generating a first rotor signal indicative of a first position of a first rotor; and

a second detector generating a second rotor signal indicative of a second position of a second rotor;

said controller adjusting rotational speed of said first rotor relative to said second rotor.

3. (original) A vertical takeoff and landing aircraft comprising:

an aircraft fuselage;

a plurality of hubs mechanically coupled to said fuselage and rotated by at least one engine;

a plurality of rotors mechanically coupled to said plurality of hubs and propelling and lifting said aircraft fuselage;

a plurality of detectors generating rotor signals indicative of positions of said plurality of rotors; and

a controller coupled to and adjusting rotational speed of said plurality of rotors in response to said rotor signals.

4. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors are coupled to said aircraft fuselage and are directed towards said plurality of rotors.

5. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors are coupled to said plurality of rotors and are directed towards said aircraft fuselage.

6. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors detect infrared energy of said plurality of rotors.

7. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors detect ultraviolet energy of said plurality of rotors.

8. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors detect infrared energy of at least a portion of said aircraft fuselage.

9. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors detect ultraviolet energy of at least a portion of said aircraft fuselage.

10. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising a plurality of emitters, said plurality of detectors generating said rotor signals in response to emitted energy from said plurality of emitters.

11. (original) A vertical takeoff and landing aircraft as in claim 10 wherein said plurality of emitters are selected from at least two of infrared emitters and ultraviolet emitters.

12. (original) A vertical takeoff and landing aircraft as in claim 10 wherein said plurality of emitters comprises:

a first emitter;

a first detector generating a first rotational position signal indicative of a first position of a first rotor in response to emitted energy from said first emitter;

a second emitter; and

a second detector generating a second rotational position signal indicative of a second position of a second rotor in response to emitted energy from said second emitter; said controller coupled to said first detector and said second detector and adjusting rotational speed of said plurality of rotors in response to said first rotational position signal and said second rotational position signal.

13. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of detectors comprises:

a first detector generating a first rotational position signal indicative of a first position of a first rotor; and

a second detector generating a second rotational position signal indicative of a second position of a second rotor;

said controller coupled to said first detector and said second detector and adjusting rotational speed of said plurality of rotors in response to said first rotational position signal and said second rotational position signal.

14. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising a plurality of emitters, said plurality of detectors generating said rotor signals in response to reflected energy generated from said plurality of emitters.

15. (original) A vertical takeoff and landing aircraft as in claim 14 further comprising at least one reflective device reflecting energy emitted from said plurality of emitters towards said plurality of detectors.

16. (original) A vertical takeoff and landing aircraft as in claim 14 wherein said plurality of emitters and said plurality of detectors are coupled to said aircraft fuselage.

17. (original) A vertical takeoff and landing aircraft as in claim 14 wherein said plurality of emitters and said plurality of detectors are coupled to said plurality of rotors.

18. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said controller in adjusting rotational speed of said plurality of rotors adjusts gas flow to said plurality of rotors.

19. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising at least one gas control valve, said controller adjusting rotational speed of said plurality of rotors via said at least one gas control valve.

20. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising at least one brake, said controller adjusting rotational speed of said plurality of rotors via said at least one brake.

21. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising at least one drag device, said controller adjusting rotational speed of said plurality of rotors via said at least one drag device.

22. (original) A vertical takeoff and landing aircraft as in claim 21 wherein said at least one drag device is selected from at least one of a flap, a slat, a flaperon, an aileron, a spoiler, a drag plate, and a split aileron.

23. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said controller switches said plurality of tandem rotor/wings between a vertical lift mode and a fixed wing mode.

24. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising at least one transitional lift wing mechanically coupled to said fuselage and enabling lift of said aircraft fuselage during off-loading lift of said plurality of rotors.

25. (original) A vertical takeoff and landing aircraft as in claim 3 wherein said plurality of rotors are tandem rotor/wings.

26. (original) A vertical takeoff and landing aircraft as in claim 3 further comprising a plurality of emitters, said plurality of detectors generating said plurality of rotor signals

in response to passage of said plurality of rotors through emissive energy generated from said plurality of emitters.

27. (withdrawn) A method of operating a vertical takeoff and landing aircraft comprising:
generating a plurality of rotor signals indicative of respective positions of a plurality of rotors of the aircraft, said plurality of rotors lifting the aircraft;
comparing said plurality of rotor signals and generating a rotor adjustment signal in response to said comparison; and
adjusting rotational speed of at least one of said plurality of rotors in response to said rotor adjustment signal.

28. (withdrawn) A method as in claim 27 wherein adjusting rotational speed of at least one of said plurality of rotors comprises adjusting rotational speed of a first rotor relative to rotational speed of a second rotor.

29. (withdrawn) A method as in claim 27 further comprising switching said plurality of rotors between a vertical lift mode and a fixed wing mode.

30. (withdrawn) A method as in claim 27 wherein adjusting rotational speed of at least one of said plurality of rotors comprises adjusting gas flow to said plurality of rotors.

31. (withdrawn) A method as in claim 27 wherein adjusting rotational speed of at least one of said plurality of rotors comprises adjusting rotor brake pressure.

32. (withdrawn) A method as in claim 27 wherein adjusting rotational speed of at least one of said plurality of rotors comprises adjusting a drag device.

33. (withdrawn) A method as in claim 27 further comprising:

determining rotor positions of said plurality of rotors;

comparing said rotor positions with an angular tolerance to generate said rotor adjustment signal; and

adjusting rotational speed of said plurality of rotors in response to said rotor adjustment signal.

34. (withdrawn) A method as in claim 33 further comprising determining a rotor speed adjustment technique in response to said rotor adjustment signal.

35. (withdrawn) A method as in claim 33 wherein adjusting rotational speed of said plurality of rotors comprises adjusting gas flow to said plurality of rotors when said rotor adjustment signal is less than a predetermined value.

36. (withdrawn) A method as in claim 33 wherein adjusting rotational speed of said plurality of rotors comprises adjusting rotor brake pressure when said rotor adjustment signal is greater than a predetermined value.

37. (original) A vertical takeoff and landing aircraft comprising:

an aircraft fuselage;

a plurality of hubs mechanically coupled to said fuselage and rotated by at least one engine;

a plurality of tandem rotor/wings mechanically coupled to said plurality of hubs and propelling and lifting said aircraft fuselage;

a plurality of emitters;

a plurality of detectors generating tandem rotor/wing signals indicative of positions of said plurality of rotors in response to emissive energy generated by said plurality of emitters; and

a controller coupled to and adjusting rotational speed of said plurality of tandem rotor/wings in response to a comparison of said tandem rotor/wing signals.

38. (original) A vertical takeoff and landing aircraft as in claim 37 comprising:

a first detector vertically in-line with a first emitter, corresponding with a first tandem rotor/wing, and generating a first tandem rotor/wing signal; and

a second detector vertically in-line with a second emitter, corresponding with a second tandem rotor/wing, and generating a second tandem rotor/wing signal;

said controller adjusting rotational speed of said first tandem rotor/wing relative to said second tandem rotor/wing in response to a comparison between said first tandem rotor/wing signal and said second tandem rotor/wing signal.

39. (withdrawn) A method of operating a vertical takeoff and landing aircraft comprising:
generating a plurality of rotor signals indicative of positions of a plurality of rotors of the aircraft, said plurality of rotors lifting the aircraft;
determining rotor positions of said plurality of rotors in response to said plurality of rotor signals;
comparing said rotor positions with an angular tolerance to generate a rotor adjustment signal;
determining a rotor speed adjustment technique in response to said rotor adjustment signal; and
adjusting rotational speed of at least one of said plurality of rotors in response to said rotor adjustment signal and said rotor speed adjustment technique.

40. (withdrawn) A method as in claim 39 wherein adjusting rotational speed of at least one of said plurality of rotors comprises adjusting gas flow to said plurality of rotors when said rotor adjustment signal is less than a predetermined value and adjusting rotor brake pressure when said rotor adjustment signal is greater than said predetermined value.